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-December 1st, 1873.—Consent before ballot is ordered to be obtained of applicant as Member who may be classed as Associate or Junior, amount of fees and dues of Juniors recommended, Committee on Norman Medal requested to report a plan for awarding the prize, and Committee on Library, a list of subjects on which papers are solic-

ited, 35. -January 5th, 1874.-Proposals for admission considered, list announced of those whose membership under Art. XXXI. of Constitution, had ceased; reports presented from Committee on Norman Medal, and Committee on Library, comprising a list of subjects relating to the practice of engineering; communication from Engineers and Architects' Association of Vienna read; committees to be appointed to regularly procure reports and other descriptive matter; circulars asking same to be sent to corporate and government officials; time of meetings of the Board changed,

-February 2d, 1874.—Proposals for admission considered; report on Norman Medal taken up; Code of Rules to govern competition presented, 6o.

-March 2d, 1874.—Proposals for admission considered; report on Norman Medal, 68,—and Code of Rules discussed; announcement ordered that papers for competition will be received; committee appointed to report plan for Sixth Annual Convention, 69.

-March 30th, 1874.—Proposals for admission considered; report of plan for Sixth Annual Convention adopted; scheme for loaning from library requested; circular asking

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-May 4th, 1874.-Proposals for admission considered, committee on applications appointed; Treasurer's semi-annual report and report on change in location of Society's rooms, accepted; committee on rooms, to confer with kindred associations, appointed, 86.

-June 4th, 29th, 1874.-Meetings not

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-August 3d, 31st, 1874.-Proposals for admission considered, routine busi-

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-October 5th, 1874.-Proposals for admission considered; amendments to By-Laws, relating to requirements for membership, proposed, 132.

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-February 1st, 1875 .- Proposals for admission, investment of the Society's funds, and the Treasurer's reports considered; lease of suitable rooms, with other associations, authorized,

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-March 1st, 1875 .- Proposals for admission, dues of Resident Juniors, and rates of postage on Transactions considered; rooms of the Society to be vacated; diploma submitted and copies ordered print-

-March 19th, 1875.-Action taken upon a communication from the Secretary of War relating to the appointment of a Board to test iron, steel, and other metals, 210.

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-April 5th, 1875.—Proposals for admission, and investment of the Society's funds considered; addition to By-Laws relating to appointment of special committees referred, 210.

-May 3d, 1875.—Meeting not held, 222. -May 10th, 1875.—Proposals for admission and investment of the Society's funds considered; rules for issue of diplomas adopted; Treasurer's semi-annual report presented; invitations for entertainment of members at Seventh Annual Convention accepted; change in hour of meeting of the Society recommended, and of the Board adopted, 222.

-June 2d, July 7th, 1875.-Proposals for admission considered, and rou-

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-October 6th, 1875.—Proposals for admission considered; action relating to dues of Resident Juniors recommended; other business done, 293.

-October 20th, 1875.—Annual report of the Board considered; representation of American engineering at the Centennial Exposition discussed, issue of circular ordered; change in conditions of award of the Norman Medal recommended; action taken on appointment of committee upon Providence sewerage system, 302.

-October 27th, 1875. - Annual report of the Board considered, 302.

-November 4th, 1875.-Standing committees appointed; hour of meet-

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-December 1st, 1875 .- Proposals for admission considered; amendments to the By-Laws recommended; committees on a "revised Constistitution," "Change of Name" and "Securing national Recognition of the Society," on "Proposals for Membership," and on "Rooms," continued; officers' reception to be given, and routine business done, 329.

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-December 3d, 1873.—Amount of fees and dues of Juniors, recommended; report of the committee to revise the By-Laws, accepted, 34.

-December 17th, 1873.—Paper describing a "Plan adopted for erecting a Draw-span without false Works" read and discussed; account of the introduction of baggage checks presented; setting of cement under pressure, and the cost of driving piles with the gunpowder pile driver, considered, 49.

-January 7th, 1874.—Members elected, resignations announced, 49:— Amount of fees and dues of Juniors, fixed; amendments to the By-laws adopted; contributors of papers to give notice of number of extra copies required; alignments of the Hoosac tunnel described, 50.

-January 21st,1874.—Tests of materials used in construction and testing machines, considered; "Experiments on the tensile Strength of Bar Iron and Boiler Plate," "Proportions of the Heads of Eye Bars," "Tests of wrought Iron Beams and Rods," "Tests of Bridge Irons," "Effects of Cold on Iron and Steel Rails" and "Experiments on Steel Wire" presented; Emery's testing machine described, 50.

-February 4th, 1874.—Engineers charging for advice; course of instruction in schools and colleges for students of engineering, referred; "Researches on the Resistance and physical Properties of Metals" considered and illustrated, 59.

-February 18th, 1874.—Memorial of the American Metrological Society referred; proper charges for engineering service considered and authorities quoted, 67.—Wharton's safety railway switch; "Elements of Cost of Railway Traffic" taken up, communications thereon,

-March 4th, 1874.—Ballots for members canvassed; "Method pursued in Replacing a Stone Pier on a Pile Foundation" read; report

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-March 18th, 1874. — "Approximate Value of a Reduction of ruling or maximum Grades" read; tests of materials used in construction, and testing machines, taken up; "Tests of Eye Bars for Iron Bridges on the Erie Railway" presented; discussion, 77.

-April 1st, 1874.—Ballots for members canvassed, resignation announced; "Strength, Durability and Resilience of Materials of Machine Construction" read; "Elements of Cost of Railroad Traffic" discussed; a comparative examination of pumping engines considered and referred, 77.—Committee appointed to report upon change in location of Society's rooms, 78.

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-April 15th, 1874.—"Experiments on Mixtures of Mortars and Concretes" and the sustaining power of earth, discussed; death of John B. Rocers announced, committee appointed; founding a testing laboratory considered and referred; "Review of Revy's Hydraulics of great Rivers" read; improvement of the mouths of the Mississippi, discussed, 85.

-May 6th, 1874.—Ballots for members canvassed; death of JONATHAN CAMP announced, committee appointed, 85.—"Flow of the West Branch of the Croton River" read; Revy's "Hydraulics of great Rivers," and improvement of mouths of the Mississippi, discussed; report on Memorial of the American Metrological Society tabled, and on course of instruction in schools and colleges for students of engineering, adopted, 86.

-May 20th, 1874.—"European Railways as they appear to an American Engineer" and dams for reservoirs, should they be of earth or masonry, read and discussed; committee appointed to report upon failure of dam at Mill river; measurement of strains by weighted levers and by hydraulic gauges, compared, 95.
-June 3d, 1874.—Ballots for members

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-June 17th, 1874.—Meeting not held,

-July 1st, 1874.—Death of J. MILTON BROWN announced, 111,—committee appointed; sixth Annual Convention discussed, thanks of the

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-September 3d,1874.—Ballots for members canvassed; death of T. Marr Johnson announced, committee appointed; report on Sixth Annual Convention accepted and referred; "Report on Gauge of New York & Erie R. R." read; committee appointed to investigate the conditions of success and to recommend plans for the rapid transit of passengers and the handling of freight, in and about New York, 123.

-September 16th, 1874.—" Upright Arched Bridges" discussed, 131.

-October 7th, 1874.—Ballots for members canvassed; deaths of Isaac C. Buckhout and William Philips announced, resolutions submitted and committees appointed; Board of Censors to award the Norman Medal, the "Granite Mill Disaster," committee on "Rapid Transit:" Amendment to By-Laws, relating to requirements for membership, moved 131.

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October 21st, 1874.—" Efficiency of Furnaces burning wet Fuel" read: Specimens of cables of Fairmount Suspension Bridge presented, 143.

-November 18th, 1874. — Vice-Presi-ROBERTS' account of a professional visit to Europe and Africa, 167.

-December 2d, 1874.—Report on Annual Conventions adopted, and on "Rapid Transit and the Handling of Freight," accepted, 167.

-December 16th, 1874.—Discussion of professional matters, 185.

-January 6th, 1875.—Ballots for members canvassed; death of EDDV D. MASON announced, committee appointed; resident members of committee on Seventh Annual Convention appointed; report on "Rapid Transit and the Handling of Freight," and presentation of Norman Medal deferred, 185.

-January 20th, 1875.—Efforts to secure a Congressional appropriation and the appointment of a commission to test American iron, steel and other materials; verbal reports on "Rapid Transit and the Handling

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of Freight," and on "Change of the Society's Rooms."—Vice President ROBERTS' account of observations as one of the Board of Engineers to report upon the improvement of the Mississippi mouths, 193.

-February 3d, 1875.—Ballots for members canvassed. Norman Medal presented; address of President Adams, 194,—and reply of J. James R. Croes; report on "Rapid Transit and the Handling of Freight,"called for; protest against the adoption of a special plan for rapid transit, 195;—report read and accepted as a paper of the committee; addition to By-Laws relating to appointment of special committees moved, 196.

-February 17th, 1875.—" Approximate Determination of Stresses in the Eye-Bar Head," read and discussed, 203.

-March 3d, 1875.—Ballots for members canvassed; report on "Rapid Transit" considered, a communication thereon declined; distribution of advance copies of papers restricted to members; action relating to rates of postage on Transactions, and dues of Resident Juniors taken; reports on "Means of averting Bridge Accidents" received; addition to By-Laws, relating to appointment of special committees referred, 203.

-March 17th, 1875.—Death of James Laurie and William L. Dear-Born announced; communications on "Tests of Eye-Bars," "Levees of the Mississippi," "Upright Arched Bridges," and appointment of a Board to test iron, steel and other metals, considered; discussion of "Handling Freight in and about New York," deferred, 209.

-April 7th, 1875.—Ballots for members canvassed; "Fabrication of Beton Coignet by manual Labor," "Delta of the Mississippi considered in relation to an open River Mouth," referred; sample of rail, 45 years old presented, 209; — Report on "Rapid Transit" discussed; resolutions adopted that committees report upon, a mutual benefit society to aid families of deceased members, the nomenclature and classification of masonry, and a uniform system of the gauging of streams; samples of brick and stone for testing, asked for, 210.

-April 21st, 1875.—Professional matters discussed, 221.

-May 5th, 1875.—Meeting not held,

-May 12th, 1875.—Ballots for members canvassed; reports on "Tests of American Iron and Steel," "Form, Weight, Manufacture and Life of Rails," "Founding an engineering Library and Museum," "Statistics of the Cost and Work of Pumping Engines," and on "Railway Signals," presented, 221; — Hour of regular meetings changed, 222.

-May 19th, 1875.—Meeting not held, 235.

-June 2d, 1875.—Report on arrangements for Seventh Annual Convention made; organization of a mutual benefit society considered; committees to prepare memoirs of JAMES LAURIE and ISAAC D. COLMAN, announced; professional topics discussed, 235.

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June 16th, 1875.—"Levees" discussed. Proceedings of Seventh Annual Convention considered, 264.

-July 7th, 1875.—Ballots for members canvassed, 264.—"Upright arched Bridges" discussed; motion that rooms be opened in the evening, referred, and to examine the "Keely Motor," rejected; report on "Policy of the Society" ordered printed, 265.

-September 1st, 1875. — Ballots for members canvassed; fall of bridge near Brainard, Minn., discussed; deaths of T. WILLIS PRATT, HENRY M. GARDNER, and EDWARD H. TRACY announced; discussion of "Policy of the Society" deferred; the appointment of committees on "Nomenclature and Classification of Masonry" and on the "Gauging of Streams" submitted to letter ballot, 285.

-September 15th, 1875.—Steel bars cut by revolving iron discs, exhibited, 285.—Width of tires of vehicles in cities, and representation of Amercan engineering at the Centennial Exposition, considered, 286.

-October 6th, 1875.—Elbe bridge described and illustrated; death of IRA SPALDING announced; what shall be the amount of dues of a Resident Junior moved; verbal report on "Policy of the Society" presented; time and place of the

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Eighth Annual Convention considered, circular to be issued; committee on annual dinner appointed, 293.

-October 20th, 1875.—"Improvement of the Mouths of the Mississippi" presented and discussed; appointment of committees, to report upon a mutual benefit society, to aid families of deceased members, and to prepare memorials of WILLIAM L. DEARBORN, EDWARD H. TRACY and IRA SPALDING, announced, Communications relating to appointment of a committee upon Providence sewerage system considered and referred to the Board, 200.

-November 17th, 1875.—"Construction of a River Wall at Foot of Canal street" discussed; "A Note on Resistance of Materials" read, 302.

-December 1st, 1875.—The Norman Medal presented; amendments to the By-Laws moved, relating to proceedings of Annual Conventions, holding officer's receptions, publication of abstracts of papers, authorization of special committees, 327,-application for professional service, duties of the President, and classification of resident and non-resident members. Appointment announced of committees on "Nomenclature and Classification of Masonry," on "Gauging of Streams," on "American Engineering at the Centennial Exposition," and of resident members of Committee on Eighth Annual Convention; "Efficiency of Steam Vacuum Pumps" and "Verrugas Viaduct and Method of its Erection," read and discussed, 328.

-December 15th, 1875. — Social and conversational meeting held, colloquial lecture on "Professional Intercommunication," 328.

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(-THE SIXTH), June 10th-13th, 1874.—
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can Iron and Steel;" proceedings announced; papers read on "Resistance of Beams to Flexure,"
"Draw Bridge Spans and their
Turn Tables," "Foundations of
the Brooklyn Anchorage of the East River Bridge," "Conflagration existing in the Coal at Kidder Slope" and the "Terredo Navalis," 110. - Evening session. read on "Improvements of the Water Front of New York," "Utica Lift Draw Bridge," "Upright Arched Bridges" and "Education of Civil Engineers;" papers presented on "Underground Drainage in New York," "Erection of the Illinois & St. Louis Bridge," and "Construction of the Williamsburgh Reservoir; report on "Securing a National Recognition of the Society" made; time and place of the Seventh Annual Convention considered, committee appointed; attention called to "Testing Laboratory of Stevens Institute of Technology; committee on "Railway Signals" appointed, III.

(-THE SEVENTH), June 8th-12th, 1875. -Attendance, 235.—First session. Address of Vice-President Roberts, 236.—Chairman and Secretary elected, 240.—"Arched Bridges,"
"Draw Bridges," "Foundations," "Erection of Structures," "Bridge Accidents," "Pumping Engines," "Railway Signals," and "Rapid Transit in large Cities," discussed. Second session. "Policy of the Society "considered, 241,-committees appointed to recommend action, 248,-"Increase of Associate and Fellowship Membership and of the Society's Funds" considered, 249.—Committee on " Policy of the Society" reported a By-Law, determining how special committees on engineering subjects shall be ap-pointed; "Establishment of an Engineering Library," 250,-and "National Recognition of the Society" considered; By-Law offered relating to Conventions, and authorizing business sessions. Third session. "Rails," "Rapid Transit in large Cities," "Cheap Freight Transportation," "Railway Sys-tems contrasted," "Bridge Accidents," 251,-" Tests of American Iron and Steel," "Uses of Steel in

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Construction," "Testing Laboratory," "Theory of Flexure," "River Mouths," "Rainfall and resulting Water Supply," "Gauging of Streams" and "Cements and Concretes" discussed. Papers on "Levees," "Consumption and Waste of Water," "Masonry Dams," "Construction of a River Wall at Canal Street, New York," and "Fires in Coal Mines" presented; vote of thanks, 252.—Fourth session. Reports on "Statistics of the Cost and Work of pumping Engines," "Form, Weight, Manufacture, and Life of Rails," "Railway Signals" and "Tests of American Iron and Steel" accepted, 259,-on the "Means of averting Bridge Accidents," considered, 260,-and on "Policy of the Society," presented and referred, 261. - Communication read, asking appointment of committee to report upon system of beton en masse, 263.-" Plan for the Benefit of Families of deceased Members" considered, and resolution adopted; resolutions relating to nomenclature of masonry and gauging of streams, referred, 264.

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(-THE TWENTY-FIRST), November 5th, 1873. — Attendance, reports accepted of the Board of Direction, of committee to inquire into the various modes of publishing the papers of the Society, I,-and of committee on time and place of the Sixth Annual Convention; officers for 1873-4 elected; amendments to the Constitution adopted, declaring who are eligible for admission, classifying members, stating how applications shall be made, acted upon and ballots taken, 2,—what constitutes resident and non-resident membership, when amounts of fees and dues shall be fixed, how membership may cease and when amendments to the Constitution can be made, 3.—Amendment to By-Laws proposed, relating to payments of half-yearly dues; resolutions adopted, that Treasurer's Annual Report be closed October 1st and sent to members, that Society meetings on the third Wednesday of the month shall be solely for professional improvement and social intercourse,

and appointing a committee to revise the By-Laws. Time and Place of the Sixth Annual Convention

fixed, 4.

(-THE TWENTY-SECOND), November 4th, 1874.—Attendance, 143.—Annual report of the Board of Direction read and accepted; ballots for members canvassed; officers for 1874-5, elected; report on "Revised Constitution" presented; amendments to By-Laws relating to requirements for membership, adopted; fee of Fellows, reduced; Norman Medal awarded; time and place of the Seventh Annual Convention fixed; reports on "Tests of American Iron and Steel," 144,—and "Change of the Society's Rooms" presented; change of rooms ordered; committees on "Means of averting Bridge Accidents," "Plan for the Increase, Maintenance, and Preservation of an engineering Library and Museum," "Comparative Examination of the principal pumping Engines in Use," "Founding a Testing Laboratory," "Securing a national Recognition of the Society," and on "Railway Signals," reported progress, 145.

(-THE TWENTY-THIRD), November 3d. 1875.—Attendance, 299. — Annual report of the Board of Direction read and accepted; the retiring Treasurer thanked; ballots for members canvassed; vote on appointment of committee on "Nomenclature and Classification of Masonry" and "Gauging of Streams" announced; officers for and "Gauging 1875-6, elected; Norman Medal awarded, 300. Reports on "Tests of American Iron and Steel," "Change of the Society's Rooms, "Mutual Benefit Society," and "Policy of the Society" presented; Time and place of the Eighth Annual Convention fixed; vote by circular ordered upon Civil Engineers' Insurance League; By-Laws proposed and referred, relating to applications made to the Society for professional service, and to publication of abstracts of papers; assessment of resident Juniors fixed; communications suggesting representation of American engineering at the Centennial Exposi-

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